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THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEW JERSEY

SAVE LONG BEACH ISLAND, a nonprofit corporation, P.O. Box 579, Ship Bottom, NJ 08008; and ROBERT STERN, Ph.D., an individual, 329 4th Street, Beach Haven, NJ 08008; Plaintiff(s),	
	Case No.
v.	
	Judge
UNITED STATES DEPARTMENT OF COMMERCE, 1401 Constitution Ave. NW Washington, DC 20230; GINA RAIMONDO, UNITED STATES SECRETARY OF COMMERCE, acting in her official capacity, 1401 Constitution Ave. NW Washington, DC 20230 NATIONAL MARINE FISHERIES SERVICE,1315 East-West Highway, Silver Spring, MD 20910; JANET COIT, Director of the National Marine Fisheries Service, acting in her official capacity, 1315 East-West Highway, Silver Spring, MD 20910 Defendant(s).	

Complaint For Declaratory and Injunctive Relief Under the Marine Mammal Protection Act, National Environmental Policy Act and Administrative Procedures Act

Plaintiff SAVE LONG BEACH ISLAND ("Plaintiff") by its attorney files this Complaint against Defendants United States Department of Commerce, United States Secretary of Commerce Gina Raimondo, National Marine Fisheries Service, and Director of the National Marine Fisheries Service, Janet Coit, ("Defendants") and alleges as follows:

NATURE OF THE ACTION

1. This is an action to reverse and set aside Defendant National Marine Fisheries Service's ("NMFS") incidental take/harassment authorizations, eleven active and five pending, off the New York and New Jersey coasts, issued pursuant to 16 U.S.C. § 1361 et seq., the Marine Mammal Protection Act ("MMPA"), as such authorizations, cumulatively, and even individually, contravene 16 U.S.C. § 1371(a)(5)(D),(i),(I), of the MMPA, and moreover, constitute arbitrary and capricious agency actions unsupported by substantial evidence in violation of 5 U.S.C. § 706(2)(A) and (E) ("APA").

2. Plaintiff is seeking an order reversing and setting aside Defendant's eleven active and five pending incidental

take/harassment authorizations permitting offshore wind energy development activities adjacent to the New Jersey and New York coastlines, as violative of the MMPA and arbitrary and capricious under the APA. A formal prayer is delineated *infra*.

3. In contravention of the MMPA, the eleven active and five pending incidental take/harassment authorizations, cumulatively, and even individually, take more than a "small number" of the North Atlantic Right Whale and Humpback Whale species, and will have more than a "negligible" impact on same.

4. The incidental take/harassment authorizations, active and pending - even considering their already impermissibly high amount of requested takes – determined the quantity of takes arbitrarily, capriciously, and without substantial evidence by significantly underestimating the maximum spatial extent of Level B harassment noise emanating from survey vessels, as explained further *infra*.

5. The incidental take/harassment authorizations, active and pending, arbitrarily and capriciously assumed that the authorized high-intensity noise activities would result in almost exclusively Level B harassment takes, and virtually no Level A harassment takes. This was arbitrary, capricious and unsupported by substantial evidence. The incidental take/harassment authorizations arbitrarily underestimate the potential for Level A harassment takes from the noise exposure and cumulative noise

exposure.

6. Moreover, Defendant also violates 16 U.S.C. § 1371(a)(5)(D)(i) by issuing incidental take/harassment authorizations to certain companies which do not maintain headquarters in the United States or are otherwise unowned by United States' citizens, in direct contravention of the language of 16 U.S.C. § 1371(a)(5)(D)(i) providing only U.S. citizens with the legal pathway to obtain incidental take/harassment authorizations.

7. Finally, pursuant to the National Environmental Policy Act ("NEPA"), 42 USCS § 4332(2)(C), the Plaintiff is seeking an order from the Court to direct the Defendant to prepare an environmental impact statement assessing the cumulative effects of Defendant's issuance of the eleven incidental take/harassment authorizations off the NY/NJ coasts. Such cumulative incidental take/harassment authorizations (and likely soon issuance of five pending incidental take/harassment authorizations) constitutes a major federal action which significantly affects the quality of the human environment, triggering the requirement of an environment impact statement assessing cumulative effects, which Defendant has neglected to perform, in contravention of 42 USCS § 4332(2)(C) and the Administrative Procedures Act, 5 U.S.C. § 706(2)(A) and (E).

JURISDICTION AND VENUE

8. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. § 1331 (federal questions), 28 U.S.C. § 1346 (United States as defendant), 16 U.S.C § 1361 et seq. (Marine Mammal Protection Act), 28 U.S.C. § 2201 (declaratory judgment), 42 USCS § 4321 et seq. (NEPA), and 5 U.S.C. § 701 through 706 (Administrative Procedures Act).

9. Final agency decisions are subject to judicial review. Plaintiffs have met all applicable statute of limitations, namely, the six-year statute of limitations, pursuant to 28 U.S.C. § 2401.

10. Plaintiffs have standing to sue for the Defendant's alleged violations of the Marine Mammal Protection Act ("MMPA") through the Administrative Procedures Act ("APA").[1] Plaintiffs assert injuries that have occurred in the "zone of interests" intended to be protected by the MMPA.[2] The principal purpose of the MMPA is to protect marine mammals,[3] and as fully explained infra under "Parties," Save Long Beach Island and Robert Stern have legally protected interests in preserving marine mammals in the waters off of New Jersey/New York, marine mammals which have been increasingly dying as a primary result of Defendant's actions. The exponential rise in whale (and dolphin) mortality events over

[1] Kanoa Inc. v. Clinton, 1 F. Supp. 2d 1088 (D. Haw. 1998).

[2] *Id.*

[3] *Id.*

recent months is attributable to Defendant's incidental take/harassment authorizations, as will be discussed further infra. Finally, it is likely that the injury in fact suffered by Save Long Beach Island and Robert Stern will be redressed by a favorable decision. **The same analysis of standing applies for NEPA. Accordingly, standing is established for both MMPA and NEPA, and Plaintiffs seek judicial review via the APA.**

11. Plaintiffs have exhausted all administrative remedies available to them. Plaintiffs submitted formal comments to Defendant NMFS concerning their vessel survey approvals for three disparate companies, Atlantic Shores, Ocean Wind, and NextEra Energy. Plaintiffs further submitted formal comments to Defendant NMFS on the Notice of Application by Atlantic Shores for their incidental take authorization approvals for construction pile driving and vessel surveys. Plaintiff also sent a letter to National Oceanic and Atmospheric Administration Administrator Rick Spinrad and President Joseph Biden, regarding the vessel survey issues. No response was received to the letter, and the Defendant NMFS' responses to comments failed to address the issues discussed in this action.

12. Venue is properly vested in this Court pursuant to 28 U.S.C. § 1391(b)(2) because a substantial part of the events or omissions giving rise to the claim occurred in this jurisdiction.

PARTIES

13. Plaintiff SAVE LONG BEACH ISLAND is a 501(c)(3)non-profit corporation, of over 5,000 supporters, organized under the laws of New Jersey, and created to guard human and natural resources. These resources include, for example: marine mammals, fish, and other species that inhabit, use, or migrate off the New Jersey and New York coasts; the aesthetic elements of Long Beach Island and the New York Bight; economic interests strongly tied to the maintenance of the environmental features comprising Long Beach Island and the New York Bight, inter alia. These resources, in particular, the marine mammals off the NJ and NY coasts, are being harmed, harassed, and killed, in large part by the activities authorized by Defendant in the waters of the NY Bight. These marine mammals, not only are exceptionally important to the oceanic ecosystems, but they also impart carbon dioxide mitigatory effects. Save Long Beach Island supporters have a legally protected interest in preserving the marine mammals, some of which, like the North Atlantic Right Whale, are critically endangered species. The Defendant NMFS' issuance of numerous permits to take thousands of marine mammals runs directly counter to Save Long Beach Islands mission and guiding purpose as an entity.

14. Plaintiff ROBERT STERN, Ph.D., is an individual residing in Long Beach Island, New Jersey. He previously managed the Office of Environmental Compliance in the United States

Department of Energy. He is the president of Save Long Beach Island, and believes it to be his responsibility to guard the natural resources of Long Beach Island and the waters adjacent to it, including the land animals, plants, and marine life. Dr. Stern is concerned with all aspects of the wind turbine development process, and one focus of this action is on the harmful preparatory activities, in the form of seabed characterization which utilize high intensity noise devices. This noise propagates outward from the source vessel and disturbs, harasses, and even leads to deaths of marine mammals off the NJ and NY coasts. The current rate of whale mortality, based on the past three months, is unprecedented in the record and highly statistically significant. Dr. Stern has deeply researched the issue and has expertise in the field. As such, he is very cognizant of the harms, both in the preparatory and operational phases of the wind turbines. This ongoing noise-based sea characterization threatens the unique marine life of the Long Beach Island waters, and the place Dr. Stern has chosen to call home. The Defendants' activities, thus, are resulting in harm to Dr. Stern.

15. Defendant National Marine Fisheries Service is an agency of the federal government, within the United States Department of Commerce's National Oceanic and Atmospheric Administration, which is empowered to issue incidental take/harassment authorizations for specified human activities that result in takings of marine

mammal species. Defendant Janet Coit is the director of the NMFS. Defendant NMFS is an agency within Defendant United States Department of Commerce, of which, Gina Raimondo is the Secretary.

STATUTORY FRAMEWORK

16. The NMFS, also known as NOAA Fisheries, is a United States federal agency within the United States Department of Commerce's National Oceanic and Atmospheric Administration that is tasked with management and stewardship of the United States marine resources. The NMFS, one of the defendants in this action, is the agency responsible for issuing incidental take/harassment authorizations (hereafter referred to as "ITA") for wind energy development activities adjacent to and off the coasts of New Jersey and New York.

17. Various companies applied for, and thereupon received, innumerable ITAs issued by the Defendant.

18. The guiding purpose of the MMPA, as established in 1972, is to "prevent marine mammal species and population stocks from declining beyond the point where they ceased to be significant functioning elements of the ecosystems of which they are a part."[4]

19. Additionally, the Congressional declaration of policy as

[4] Marine Mammal Protection Act Policies, Guidance, and Regulations, NOAA Fisheries (Mar. 22, 2023), https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act-policies-guidance-and-regulations#:~:text=The%20Marine%20Mammal%20Protection%20Act%20was%20enacted%20on%20October%2021,which%20they%20are%20a%20part.

explicated in 16 U.S.C. § 1361(6) is consonant with that guiding purpose:

> marine mammals have proven themselves to be resources of great international significance, esthetic and recreational as well as economic, and it is the sense of the Congress that they should be protected and encouraged to develop to the greatest extent feasible commensurate with sound policies of resource management and that the primary objective of their management should be to maintain the health and stability of the marine ecosystem. Whenever consistent with this primary objective, it should be the goal to obtain an optimum sustainable population keeping in mind the carrying capacity of the habitat.

20. However, somewhat paradoxically, the MMPA contains provisions which permit the "taking" of marine mammal species for certain periods of time, in defined geographical regions, if such taking is not intentional, but rather, only "incidental" to another specified activity.

21. The term "take" within the meaning of 16 U.S.C. § 1362 (13) "means to harass, hunt, capture, or kill, or attempt to

harass, hunt, capture, or kill any marine mammal."

22. Level A harassment is defined as, "has the potential to injure a marine mammal or marine mammal stock in the wild." 16 USCS § 1362(18)(A)(i).

23. Level B harassment is defined as, "has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering." 16 USCS § 1362(18)(A)(ii).

24. 16 U.S.C. § 1371 – "Moratorium on taking and importing marine mammals and marine mammal products" – sets forth the relevant exceptions to the general prohibition on takings.

25. Specifically, 16 U.S.C. § 1371(a)(5)(D),(i),(I) provides in pertinent part:

> Except as provided by clause (ii), upon request therefor by citizens of the United States who engage in a specified activity (other than commercial fishing) within a specified geographical region, the Secretary shall allow, during periods of not more than five consecutive years each, the incidental, but not intentional, taking by citizens while engaging in that activity within that region of small numbers of marine mammals of a

> species or population stock if the Secretary, after notice . . . and opportunity for public comment -- finds that the total of such taking during each five-year (or less) period concerned will have a negligible impact on such species or stock and will not have an unmitigable adverse impact on the availability of such species or stock for taking for subsistence uses pursuant to subsection (b) or section 109(f) [16 USCS §§ 1379(f)] or, in the case of a cooperative agreement under both this Act and the Whaling Convention Act of 1949 (16 U.S.C. 916 et seq.), pursuant to section 112(c).

26. Note, in particular, the phraseology, "small numbers of marine mammals of a species or population stock," and, "finds that the total of such taking . . . will have a negligible impact" and that the Act refers to "citizens" engaged in a specified activity in the plural and "geographical region" in the singular. These clauses require the defendant to consider cumulative impact both spatially and temporally and are particularly pertinent in the case at bar, as will be discussed *infra*.

27. NEPA imposes a requirement that federal agencies, such

as Defendant, assess the impact of major federal actions that significantly affect the quality of the human environment, in an environmental impact statement. 42 USCS § 4332(2)(C). The assessment must include both individual and cumulative effects of the major federal action. As explained in the third claim for relief, infra, Defendants, failed to prepare the required cumulative environmental impact statement on the major federal action (see third claim for relief).

FACTS

A. Wind Energy Development Activities Authorized Over the Past 12-16 Months off of New Jersey and New York

28. Numerous wind energy development projects were authorized in the year 2022 for the coastal waters off of the New Jersey and New York shores. In total, there are eleven active ITAs issued by Defendant and five pending ITAs with Defendant, for the waters off the New Jersey/New York coasts.[5] The active ITAs are as follows.

29. South Fork Wind, LLC received an ITA for the construction of the South Fork Offshore Wind Project near New York (off of Rhode Island and Massachusetts) on December 21, 2021, for the period November 15 2022 through November 14 2023.

[5] See, Exhibit A - Clean Ocean Action letter to President Biden.

30. Atlantic Shores Offshore Wind, LLC received an ITA for marine site characterization surveys off of New Jersey and New York on April 18, 2022 for the period April 20, 2022 through April 19, 2023.

31. Ocean Wind, LLC received an ITA for the renewal of marine site characterization surveys off New Jersey on May 9, 2022 for the period May 10, 2022 through May 9, 2023.

32. Orsted Wind Power North America, LLC received an ITA for marine site characterization surveys off Delaware on May 6, 2022 for the period May 10, 2022 through May 9, 2023.

33. Ocean Wind II, LLC received an ITA for marine site characterization surveys off New Jersey on May 9, 2022 for the period May 10, 2022 through May 9, 2023.

34. NextEra Energy Transmission Mid-Atlantic Holdings, LLC received an ITA for marine site characterization surveys off New Jersey on June 29, 2022 for the period July 1, 2022 through June 30, 2023.

35. Park City Wind, LLC received an ITA for marine site characterization surveys for the New England Wind Project Phase 1, off Massachusetts to New York on July 19, 2022 for the period September 1, 2022 through August 31, 2023.

36. Atlantic Shores Offshore Wind Bight, LLC received an ITA for the marine site characterization surveys off of New Jersey and New York on August 10, 2022 for the period August 10, 2022 through

August 9, 2023.

37. Attentive Energy, LLC received an ITA for marine site characterization surveys off of New Jersey and New York on August 16, 2022 for the period September 15, 2022 through September 14, 2023.

38. Vineyard Northeast, LLC received an ITA for marine site characterization surveys from Massachusetts to New Jersey on July 27, 2022 for the period July 27, 2022 through July 26, 2023.

39. Orsted Wind Power North America, LLC received an ITA for marine site characterization surveys from New York to Massachusetts on October 6, 2022 for the period October 6, 2022 through October 5, 2023.

40. In total, there are eleven active ITAs, as delineated *supra*, and five pending ITAs, fully outlined in Clean Ocean Action's[6] letter to President Biden.

41. These ITAs (both active and pending) almost exclusively requested Level B harassment takes.

42. Level B harassment takes include, "behavioral disturbance or temporary [hearing] threshold shift)."[7]

43. As such, the classification of the ITAs issued

[6] Clean Ocean Action "is a leading national and regional voice working to protect waterways using science, law, research, education, and citizen action," https://cleanoceanaction.org/about-coa.

[7] Marine Mammal Protection - Apply for an Incidental Take Authorization, NOAA Fisheries (Aug. 31, 2022), https://www.fisheries.noaa.gov/national/marine-mammal-protection/apply-incidental-take-authorization.

explicitly concedes that the anthropogenic acoustic source utilized in the wind turbine characterization surveys can result in takings.

44. For example, the Orsted ITA provides, under "General Conditions" subsection (e): "The acoustic source must be deactivated when not acquiring data or preparing to acquire data, except as necessary for testing. Unnecessary use of the acoustic source shall be avoided."[8]

45. Note, further, in "Mitigation Requirements – Shutdown Requirements" (e)(vii): "Shutdown of acoustic sources is required upon observation of either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or within the Level B harassment zone."[9]

46. Accordingly, the ITA verbiage itself recognizes the impact of the anthropogenic acoustic sources on the marine mammals authorized to be taken by the ITA.

47. In total, the eleven active ITAs permit 181 Level B takes of North Atlantic Right Whales, 169 of Humpback whales, and 63,820 of total marine mammals. The five pending ITAs permit 782 takes of Humpback whales and 229 of North Atlantic Right Whales. This is a

[8] Incidental Harassment Authorization – Orsted, National Marine Fisheries Service (May 6, 2022), https://media.fisheries.noaa.gov/2022-05/OrstedDE_2022IHA_Issued_OPR1.pdf

[9] *Id.*

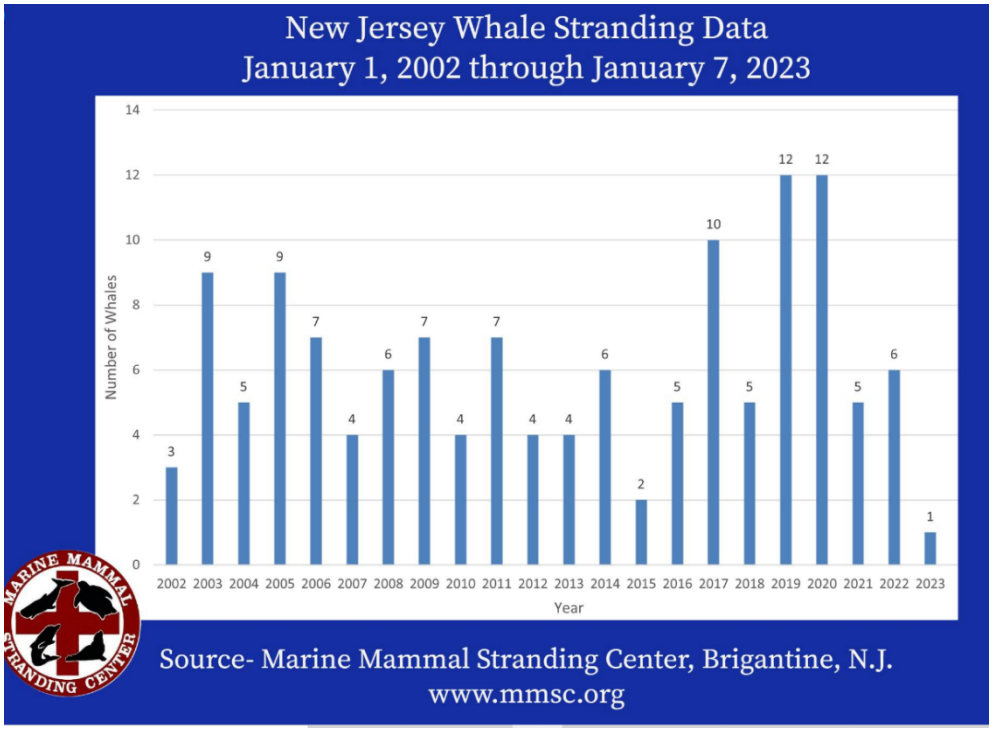
total of 951 takes of Humpback whales out of a population size of 1,396 (up to 68.1%), and 411 of North Atlantic Right Whales out of a population size of less than 350 in the NJ/NY area (up to 100%). Such high takes likely involve multiple elevated noise exposures to the same animal.

B. Exponential Increase in Whale Mortality Events Over the late 2022-early 2023 Period, Heretofore Unprecedented in the Record

48. The Marine Mammal Stranding Center ("MMSC") is a federally authorized animal hospital in the State of New Jersey, formed in 1978, that responds to animals in distress and provides medical treatment. It is a 501(C)(3) organization.[10]

49. The MMSC has collated historical data on New Jersey whale strandings and presented same in graphical form. The below graph depicts the whale strandings per year from January 1, 2002 through January 7, 2023. This graph was posted publicly on the MMSC's Facebook page. Note, importantly, 2023 is only through January 7th.

[10] Marine Mammal Stranding Center, https://www.linkedin.com/company/marine-mammal-stranding-center-nj/; https://mmsc.org/.



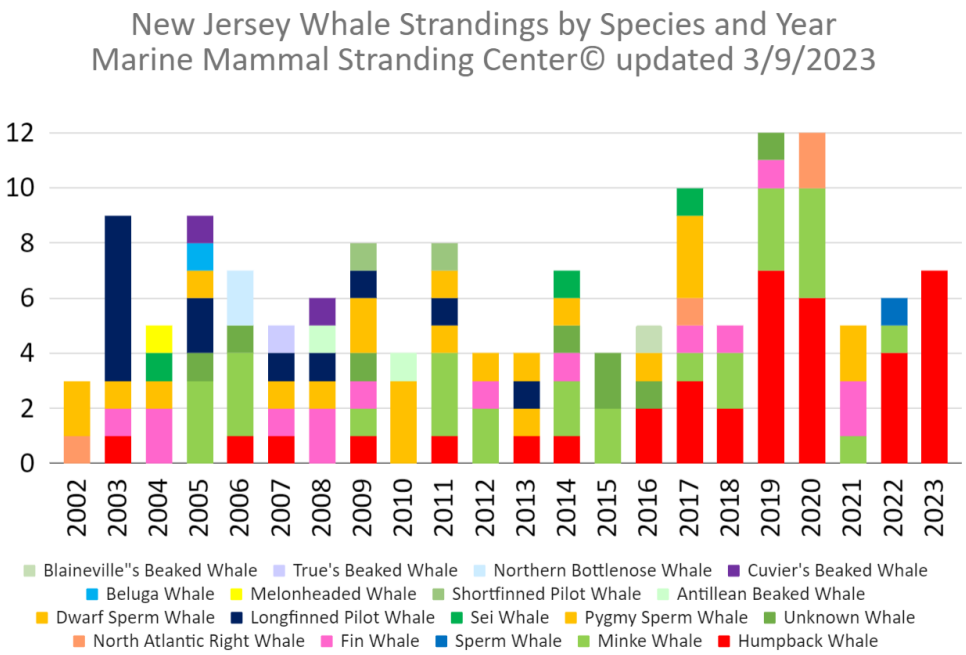
50. An alarming and dramatic increase in whale deaths (as well as dolphin deaths, discussed, *infra*) began in late 2022.

51. This alarming increase in whale deaths rapidly gained public attention, and same was reported in prominent New Jersey media sources in early 2023.[11]

52. The MMSC's updated graph[12] of whale strandings as of March 9, 2023 is depicted below. Note, importantly, this graph only reflects about 2 months of data for 2023. A graph extrapolating the extraordinary recent rate of whale mortality for all of 2023 is in paragraph 57.

[11] *Are more dead whales washing up? A look at the numbers from the past 20 years*, NJ.com (Jan. 12, 2023), https://www.nj.com/news/2023/01/are-more-dead-whales-washing-up-a-look-at-the-numbers-from-the-past-20-years.html.

[12] Cetacean Stranding Data, Marine Mammal Stranding Center (Mar. 22, 2023), https://mmsc.org/cetaceans-2002-2023.



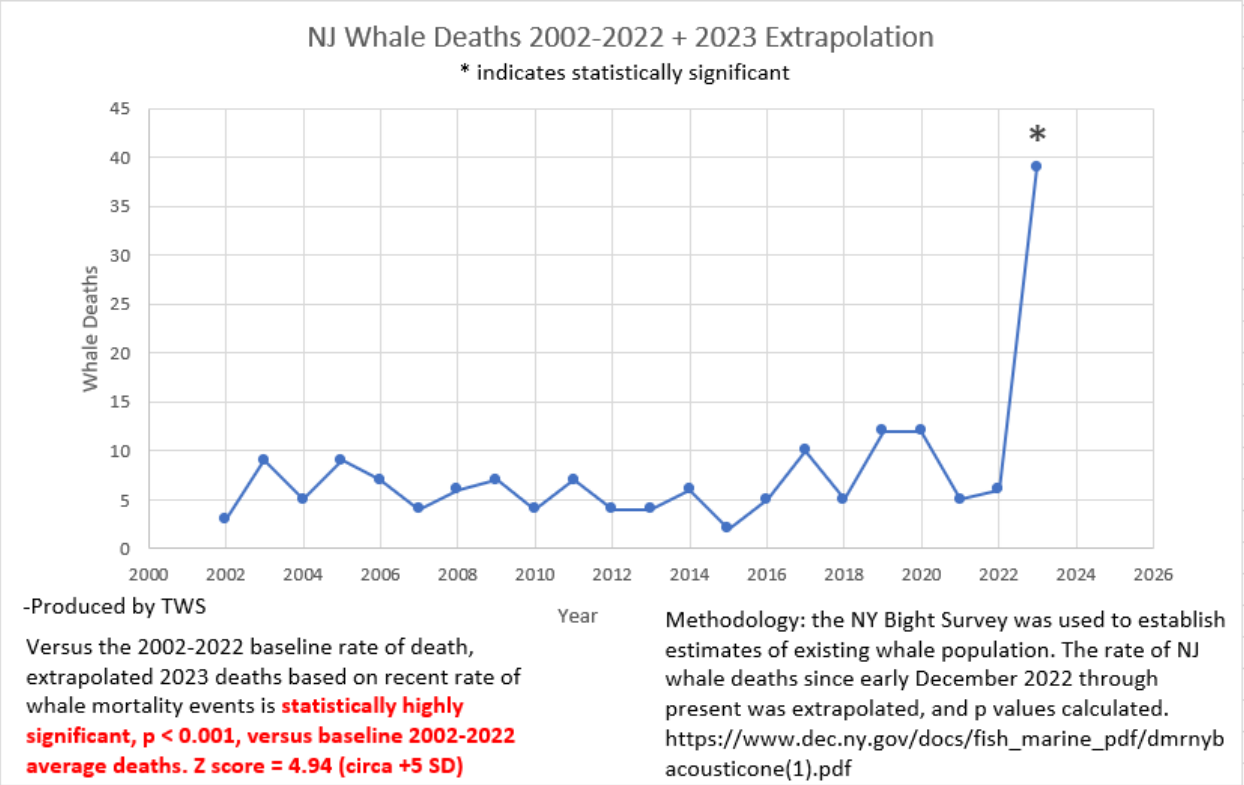
53. For the period December 5, 2022 through January 7, 2023, there were 4 New Jersey whale strandings. One of those four strandings occurred in early January 2023 (as noted in the first MMSC graph). From January 7, 2023 through March 9, 2023, there were an additional 6 New Jersey whale strandings (totaling the 7 NJ whale strandings for 2023 depicted on the above graph).

54. Thus, there have been a total of 10 New Jersey whale strandings for the period December 5, 2022 through March 9, 2023.

55. The average whale mortality rate for the 2002-2022 multidecadal period in New Jersey is 6.3 whale deaths per year.

56. The estimated total New Jersey whale deaths were calculated based upon the recent multi-month rate of mortality events and extrapolated for the upcoming year. This yielded an estimated total whale deaths of 39 whales for 2023.

57. This number of whale deaths is not only greater in quantity than the highest year of deaths in the 20 year MMSC database, but it also constitutes a highly statistically significant increase in whale deaths. Such a determination can be quickly and easily performed. See the below graph depicting the New Jersey whale deaths for the 2002-2023 period including the extrapolated value for 2023, and statistical significance note regarding 2023's estimated increase:



58. The extrapolated estimate of 39 NJ whale deaths for 2023 versus the baseline average constitutes a highly statistically significant event, with the p-value well under 0.001, and a z-

score of 4.94.

59. These data indicate a highly rare, anomalous event is underway. The p-value provides strong evidence that such an event is unlikely occurring due to chance. The z-score indicates a near 5 standard deviation event, which again, is exceedingly rare. A five standard deviation event corresponds to a 1 in 3.5 million chance of happening.[13]

60. Additionally, a study funded by Defendant NMFS found through an estimation model that – over the period 1990-2007 – observed North Atlantic Right Whale carcasses account for only 36% of all deaths.[14] Adjusting for this implies the above estimate of 39 whale deaths for 2023 could be quite a bit higher.

61. In totality, the recent exponential uptick in whale deaths is unprecedented in the NJ record since 2002, highly statistically significant, and provides robust evidence that an environmental variable is causing this dramatic increase. The only common denominator, i.e., the recent changed variable of significance, has been the spate of ITAs issued during 2022 in connection with the wind energy marine characterization activities off the New Jersey/New York coasts. The mechanisms and

[13] Tibi Puiu, *What does 5-sigma mean in science?* ZME Science (Jan. 28, 2021), https://www.zmescience.com/science/what-5-sigma-means-0423423/.

[14] Richard M. Pace III, *et al.*, *Cryptic mortality of North Atlantic right whales*, Society for Conservation Biology (Feb. 2, 2021), https://conbio.onlinelibrary.wiley.com/doi/full/10.1111/csp2.346.

corroboration for imputing the exponential whale mortality increase to the wind energy activities is outlined *infra*.

62. Moreover, whales have not been the only victim of death. There have already been a total of 23 dolphin and porpoise strandings along the NJ coast for 2023 thus far, as per MMSC.[15] The average number of deaths for the 2002-2022 is 42 (note that the one anomalous year in 2013 was due to morbillivirus[16] in dolphins – a virus in the same family as measles).

63. The extrapolated total deaths for 2023 based upon the current rate of dolphin/porpoise deaths in 2023 thus far is 104 deaths for 2023.

64. As such, the estimate for 2023 of 104 deaths of dolphins/porpoise versus the running baseline average of 42 deaths would be highly statistically significant, with a p-value less than 0.001, and a z-score of around 5, again, suggesting this is an exceedingly rare event.

65. It further fortifies the argument that an environmental/exogenous agent is responsible for this exponential increase in mortality, and since the effect is observed across multiple marine mammal species, namely, both whales and dolphins,

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[15] Cetacean Stranding Data, Marine Mammal Stranding Center (Mar. 22, 2023), https://mmsc.org/cetaceans-2002-2023.

[16] *2013–2015 Bottlenose Dolphin Unusual Mortality Event in the Mid-Atlantic (Closed) – Marine Life in Distress*, NOAA Fisheries (Oct. 26, 2021), https://www.fisheries.noaa.gov/national/marine-life-distress/2013-2015-bottlenose-dolphin-unusual-mortality-event-mid-atlantic.

it must be a variable capable of affecting both cetaceans/marine mammals.

66. A common denominator between dolphins and whales is their utilization of sound as a means to communicate and navigate, as discussed further *infra*.

C. Scientific Evidence Causally Linking the Wind Turbine Marine Characterization to the Dramatic Increase in Dolphin/Whale Deaths

67. While it cannot be foreclosed that more than one etiological factor is causing the overall increase in marine mammal deaths, if this were a multifactorial phenomenon, we should have observed multiple changed variables over the preceding 12-16 months. That has not been the case.

68. The one, materially changed variable has been the numerous ITAs issued in 2022, and thereupon, the significant amount of seabed characterization activity offshore, in preparation for turbine construction.

69. The seabed is characterized by survey vessels which emanate high magnitude noise, typically operating in the low-mid frequency range.

70. Dr. Robert Stern, the former director in the Office of Environmental Compliance in the U.S. Department of Energy, is a recognized expert in environmental impact studies. He submitted a

letter,[17] on behalf of his organization, Save LBI, to President Joseph Biden. This letter is replete with scientific data on the potential deleterious effects of wind turbines on marine life, both in the preparatory and operational phases.

71. The high magnitude noise emitted by survey vessels to characterize the sea floor in preparation for turbines permits noise levels over 200 decibels.[18]

72. The Defendant's own 2018 technical guidance[19] shows the various marine mammals, including whales and dolphins, hear in the low to mid frequency range:

Table ES1: Marine mammal hearing groups.

Hearing Group	Generalized Hearing Range*
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz
High-frequency (HF) cetaceans (true porpoises, *Kogia*, river dolphins, cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*)	275 Hz to 160 kHz
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz

* Represents the generalized hearing range for the entire group as a composite (i.e., all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall et al. 2007) and PW pinniped (approximation).

[17] See, Exhibit B, Dr. Robert Stern's analysis and letter to President Biden.

[18] *Id.*

[19] Underwater Thresholds for Onset of Permanent and Temporary Threshold Shifts, 2018 Revision to: Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (April 2018), https://media.fisheries.noaa.gov/dam migration/tech_memo_acoustic_guidance_(20)_(pdf)_508.pdf.

73. Defendant NMFS uses an established threshold for Level B harassment at 120 decibels for continuous noise, and 160 decibels for impulsive and intermittent noise[20] which is characteristic of noise source level of these vessel survey devices.

74. The Defendant NMFS' issuance of the ITAs established a maximum distance of 141 meters (slightly less than 1/10 of a mile) from the sound source for Level B harassment noise.[21]

75. Conversely, Dr. Stern's analysis demonstrates that noise levels over 160 decibels can extend outward to 16 miles, and noise levels over 140 decibels up to 34 miles away from the vessel.[22] See below table (under paragraph 79) produced by Dr. Stern. The large changes in the range of elevated noise occur because the range is an exponential function of the noise source level and transmission loss factor-measured in decibels.

76. The use of the 140 dB as a criterion is supported by its recent use by the NMFS in the Atlantic Shores project request for

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[20] Request for an Incidental Harassment Authorization to Allow the Non-Lethal Take of Marine Mammals Incidental to Site Characterization Surveys of the Atlantic Shores Lease Area (OCS-A0499), Atlantic Shores Offshore Wind Project Dec. 2021), "NOAA Fisheries has defined the threshold level for Level B harassment at 120 dBRMS re 1 microPascal (µPa) for continuous noise and 160 dBRMS re 1 µPa for impulsive and intermittent noise." https://media.fisheries.noaa.gov/2022-01/AtlanticShoresHRG_2022_App_OPR1.pdf.

[21] *Id.* at 31, "The maximum calculated distance to the Level B harassment threshold for any category and type of HRG survey equipment that could be operated is the sparker at 462.6 ft (141 m; Table 6-2 and Appendix B)."

[22] See, Exhibit B, Dr. Robert Stern's analysis and letter to President Biden.

ITA authorization for construction.[23] It is considered to be more representative as the criteria for impulsive noise for baleen whales as opposed to the 160 dB level, which is more appropriate for the general marine mammal population.

77. The need to consider a lower criteria level is also supported by field observation on bowhead whales. It has been difficult to observe the direct response of right whales to man-made noise because they are so critically endangered and sparse. But bowhead whales are a close relative of the right whale and an excellent proxy for assessing behavioral impacts to them. Displacement of bowhead whales from air gun noise, another impulsive source, has been shown to occur at received levels of 120 to 130 dB.[24]

78. Compounding the concern over large ranges is that, as shown below (paragraph 79), with a more accurate noise source level and a more often used realistic, practical 15 dB noise loss factor, the distances to meet even the 160 dB criteria are considerably larger. Regarding noise source level, the plaintiffs questioned the use of the defendant's 203 dB source level for the loudest

[23] Application for Marine Mammal Protection Act (MMPA) Rulemaking and Letter of Authorization, Atlantic Shores Offshore Wind (Sept. 2022), https://media.fisheries.noaa.gov/2022-09/AtlanticShoresOWF_2022_Application_OPR1.pdf.

[24] W. John Richardson and Gary W. Miller, Displacement of migrating bowhead whales by sounds from seismic surveys in shallow waters of the Beaufort Sea, The Journal of the Acoustical Society of America (Aug. 30, 1999), https://asa.scitation.org/doi/10.1121/1.427801.

"Dura Spark 240 Unit" when measured data in a Report[25] (Table 10) they often use places the number between 209 and 213 dB. The Plaintiffs questioned the defendant's use of a 20 dB noise loss factor when 15 dB has been used in numerous other IHA's and even recommended by the defendants for that purpose.

79. It is well known that discrete noise signals lose that characteristic and become of a more continuous nature as they travel longer distances due to variations in noise transmission paths. This would seem to be especially applicable to those sources with wider beamwidth, longer pulse durations, and higher pulse repetition rates. The disturbance criteria for continuous noise is 120 DB, even lower than the 140 DB. See Dr. Stern's table below, showing noise to 140 dB out to 13-34 miles and noise to 160 dB out to 16 miles from sound source (in contrast to Defendant's numbers – only 1/10 of a mile from sound source for 160 dB).

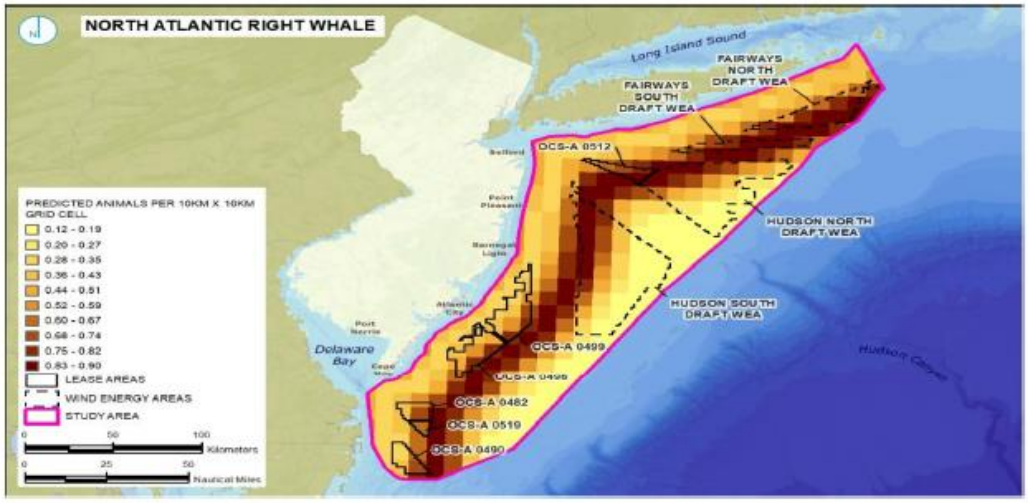
[25] Letter to Ms. Jolie Harrison, NMFS, from Save LBI, February 23,2022, Comments on the proposed ITA for Atlantic Shores Offshore Wind Project's Marine Site Characterization Surveys.

Vessel Surveys –Noise Impact

	NMFS	Alternate
Source Level	203 dB	205-211
Transmission Loss	20	15
Criteria- Noise Level to Get Down to	160	140 (for baleen whales)
Range to 140 dB	**-----**	**13-34 miles**
Range to 160 dB	**1/10 mile**	**1/2-16 miles**

80. The vessel surveying activity has been occurring directly within or near a key right whale migratory zone off the New Jersey coast. Note in the below image, the darker brownish colors indicate the highest concentration of right whale migration.

Figure 2. Right Whale Primary Migration Corridor-in purple



Source, NJ Offshore Wind Strategic Plan, Natural Resource Technical Appendix, Figure 21. Section 2.6.

81. The Atlantic Shores incidental take authorization

application[26] for construction ostensibly displays the right whale migration corridor directly intersecting the leased area and proposed wind turbine locations:

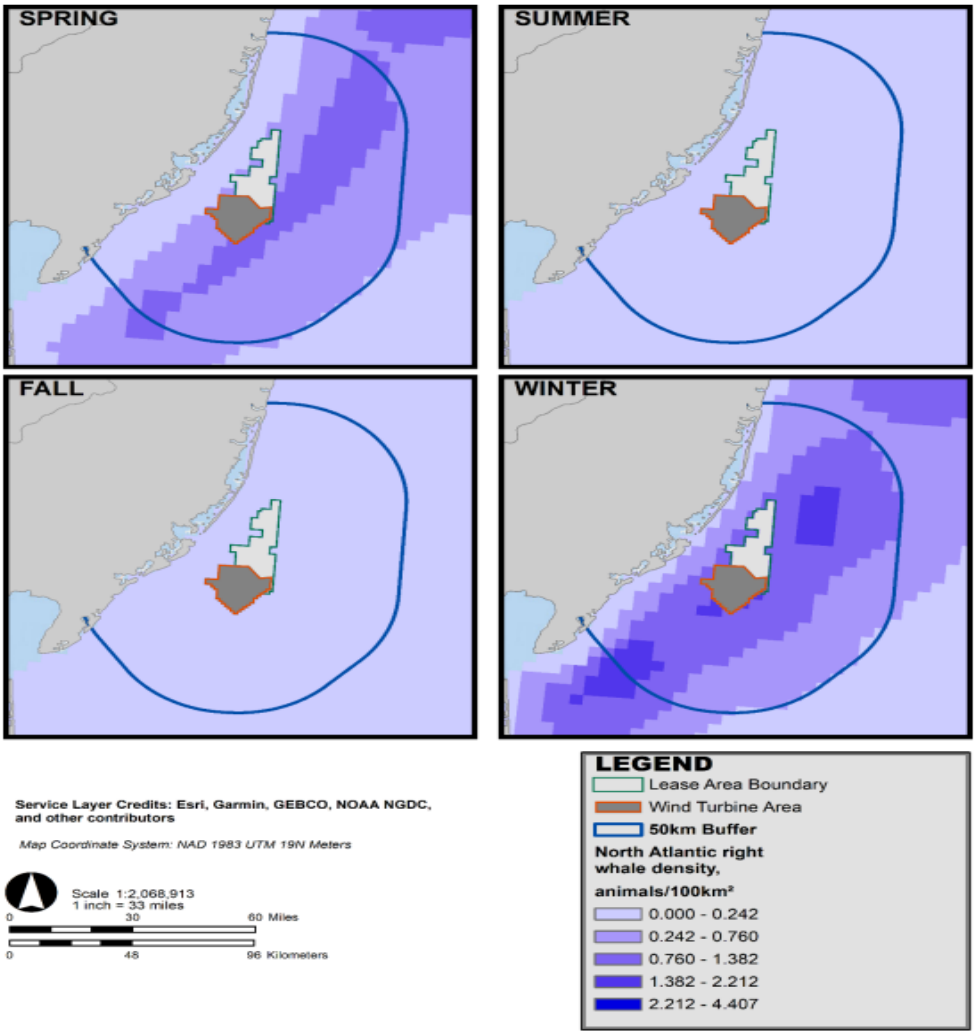
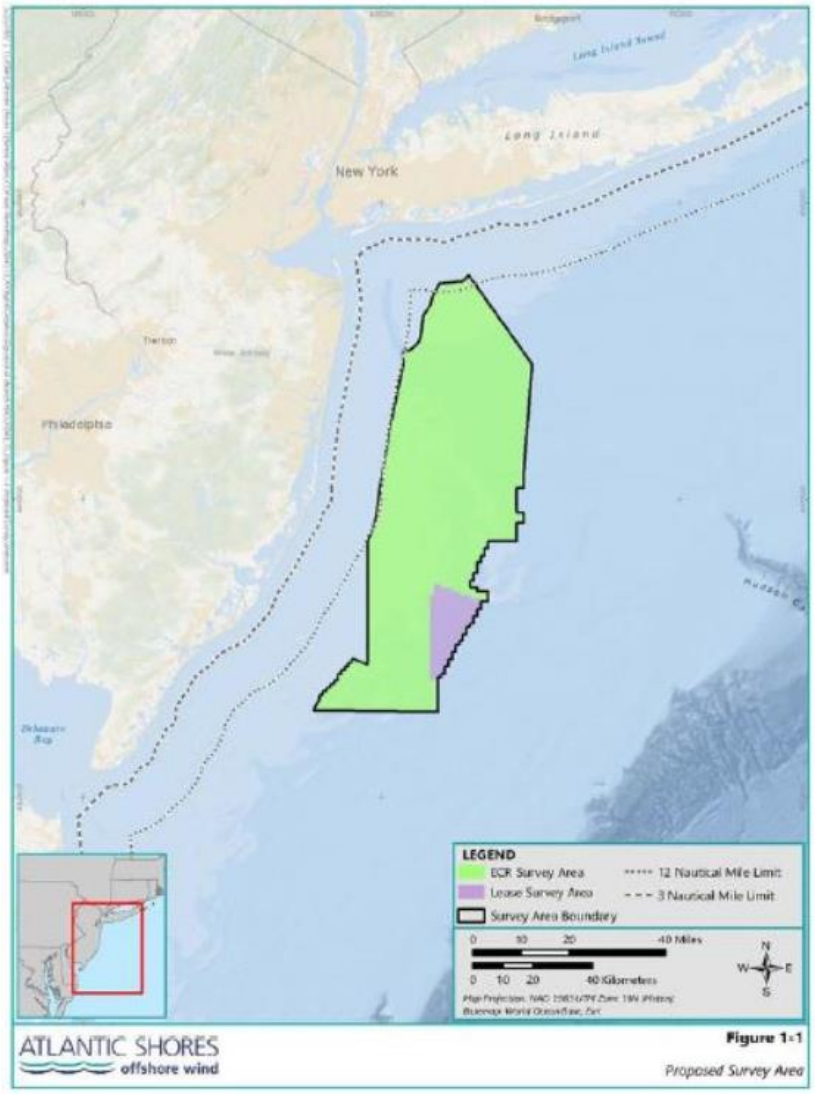


Figure 9. North Atlantic right whale maximum seasonal density from Roberts et al. (2016a, 2021a, 2021b).

[26] Application for Marine Mammal Protection Act (MMPA) Rulemaking and Letter of Authorization, Atlantic Shores Offshore Wind (Sept. 2022), https://media.fisheries.noaa.gov/2022-09/AtlanticShoresOWF_2022_Application_OPR1.pdf.

82. As another example, Atlantic Shores Offshore Wind Bight, LLC's ITA application[27] shows their survey area (see image below) intersecting with the whale migration corridor (map of corridor, *supra*, under paragraph 80):



[27] Request for an Incidental Harassment Authorization to Allow the Non-Lethal Take of Marine Mammals Incidental to Site Characterization Surveys of the Atlantic Shores Lease Area (OCS-A0541), Atlantic Shores Bight LLC (Apr. 2022), https://media.fisheries.noaa.gov/2022-06/AtlanticShoresBightHRG_2022PropIHA_App_OPR1.pdf.

83. The threshold of 140 decibels is particularly significant. The Defendant NMFS has recently used that threshold as the level at which 50% of the baleen whale population would be disturbed, meaning a large percent of the whales could be disturbed at lower levels.[28]

84. Supporting that, two studies found that Humpback whales try to avoid the noise down to a level of 140 decibels.[29]

85. Moreover, there is a scientific consensus that whales will consistently seek to avoid noise of approximately 160 decibels.[30]

86. As noted, noise of these levels emanating from the sea characterization surveys can propagate many dozens of miles away from the survey vessel, and the surveying is occurring directly in or near the right whale migration zone.

87. Disturbing the whale's behavior can mean many things:

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[28] C.I. Malme, *et. al., Investigations of the potential effects of underwater noise from Petroleum industry activities on migrating gray whale behavior* (Aug. 1984), https://www.boem.gov/sites/default/files/boem-newsroom/Library/Publications/1983/rpt5586.pdf.

[29] Robert D. McCauley, *et al., Marine Seismic Surveys: Analysis and Propagation of Air-Gun Signals; And Effects of Air-Gun Exposure on Humpback Whales, Sea Turtles, Fishes and Squid*, Centre for Marine Science and Technology - Curtin University of Technology (Aug. 2000), https://cmst.curtin.edu.au/wp-content/uploads/sites/4/2016/05/McCauley-et-al-Seismic-effects-2000.pdf; R.D. McCauley, *et al., Marine Seismic Surveys—A Study Of Environmental Implications*, Centre for Marine Science and Technology - Curtin University (Mar. 17, 2000), https://espace.curtin.edu.au/bitstream/handle/20.500.11937/80308/80370.pdf?sequence=2&isAllowed=y.

[30] B. Southall, *et al., Marine Mammal Noise Exposure Criteria: Initial Scientific Recommendations*, Aquatic Mammals (Jan. 1, 2008), https://tethys.pnnl.gov/publications/marine-mammal-noise-exposure-criteria-initial-scientific-recommendations.

> It very often means first, that the whale will seek to avoid the noise or "standoff" from it, potentially in an undesirable direction or location. In a migratory setting that could mean obstruction of, or even blockage of that migration. It could mean being driven towards the shore seeking relief. It can also involve the whale surfacing to seek a lower noise level at the surface and becoming more vulnerable to vessel strike. It can mean separation of mothers and calves due to the 'masking" of their normal communications by the vessel device noise, and such separation can be fatal for the calf. It can also mean the loss of its navigational capability, cessation of feeding or mating, and the loss of the ability to detect predators or oncoming ships. Finally, because whales use sounds to determine the very nature of their surroundings, the effects may be much more profound than that.[31]

88. Such paths to serious harm and fatality include reactions to noise stimuli causing right whales to ascend and swim just below the surface where they are more vulnerable to vessel strike, not just from survey vessels, but from other vessels as well. This behavior has in fact been demonstrated experimentally.[32]

89. Another path to injury involves separation of calves from mothers as a result of masking of their communication from

[31] See, Exhibit B, Dr. Robert Stern's analysis and letter to President Biden.

[32] Douglas P. Nowacek, *et al., North Atlantic right whales (Eubalaena glacialis) ignore ships but respond to alerting stimuli*, Proc. R. Soc. Lond. B. (Feb. 7, 2004), https://royalsocietypublishing.org/doi/10.1098/rspb.2003.2570.

elevated noise levels. Such communications can employ low-amplitude signals susceptible to auditory masking.[33]

90. The potential for such loss of mother/calf communication was also presented in another study,[34] using a 150 dB source level for a whale upcall, and a 15 dB loss factor, mother/calf communications could be blocked out to a distance of 7.2 miles from the sparker units' source noise levels of 211 dB.

91. Still another path occurs from the potential disruption of the whale's migration since a primary migration corridor for the right whale is concentrated near and even intersects part of the survey area. That could occur from reactions to above Level B exposures and/or masking of the whale's sound capabilities.

92. Reactions to above Level B exposures could also involve stress and distress. An animal's perception of a threat may be sufficient to trigger stress responses consisting of some combination of behavioral responses, autonomic nervous system responses, neuroendocrine responses, or immune responses.

93. Autonomic nervous system responses to stress typically involve changes in heart rate, blood pressure, and

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[33] Susan E. Parks, *et al., Acoustic crypsis in communication by North Atlantic right whale mother-calf pairs on the calving grounds*, Biol. Lett. (Oct. 9, 2019),https://royalsocietypublishing.org/doi/10.1098/rsbl.2019.0485#:~:text=Right%20whale%20mothers%20produced%20a,the%20most%20vulnerable%20to%20predation.

[34] Jennifer Tennessen and Susan Parks, *Acoustic propagation modeling indicates vocal compensation in noise improves communication range for North Atlantic right whales*, Endang Species Res (June 15, 2016), https://www.int-res.com/articles/esr2016/30/n030p225.pdf.

gastrointestinal activity, have a relatively short duration and may or may not have a significant long-term effect on an animal's fitness.

94. Neuroendocrine stress responses have been implicated in failed reproduction, altered metabolism, reduced immune competence, and behavioral disturbance. During a stress reaction, if an animal does not have sufficient energy reserves to satisfy the energetic costs of a stress response, energy resources must be diverted from other normal functions, leading to distress situation. This state of distress will last until the animal replenishes its energetic reserves sufficient to restore normal function. Studies in the Bay of Fundy found that noise reduction from reduced ship traffic was associated with decreased stress in North Atlantic right whales leading to a reasonable expectation that some of its normal functions, including its migration, could be impaired from higher level exposures.

95. The need to assess the impact on its migration from the masking of the whale’s communication is equally important. The whales use sound to navigate along their migration. It also appears that their migration is aided by their capability to communicate with each other along the way.

96. The right whale’s vocalizations are normally at the 125 dB rms level for low background noise, but can rise to 150 dB in

the presence of high background noise.[35]

97. A recent in-depth review of behavior response studies identified[36] a number of studies specifically associated with whale traveling, migrating, and directional swimming.

98. Numerous other studies evince the detrimental effects of anthropogenic underwater noise on marine mammals. For example, "[a]nthropogenic noise can directly or indirectly affect many marine organisms, causing auditory masking, leading to cochlear damage, changing individual and/or social behavior, altering body metabolism, and hampering embryogenesis."[37] Auditory masking is a phenomenon that occurs when the presence of one sound compromises and affects the presence of another sound.[38]

99. Marine mammal deaths as a result of sonar or otherwise

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[35] Susan E. Parks, *et al., Individual right whales call louder in increased environmental noise*, Biol. Lett. (July 7, 2010), https://royalsocietypublishing.org/doi/10.1098/rsbl.2010.0451. Using even the high 150 dB communication level, with the 211 dB noise source level and the 15 dB propagation loss factor above, masking of their communication would extend seven miles from the survey vessel.

[36] C. Gomez, *et al., A systematic review on the behavioral responses of wild marine mammals to noise: the disparity between science and policy*, Canadian Journal of Zoology (Nov. 2, 2016), https://cdnsciencepub.com/doi/abs/10.1139/cjz-2016-0098.

[37] Chao Peng, *et al., Noise in the Sea and Its Impacts on Marine Organisms*, Int J Environ Res Public Health. (Sep. 30, 2015), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4626970/.

[38] Christophe Anet, *Auditory Masking and its Effect on our Perception of Sound*, QSC (May 5, 2021), "Auditory masking occurs when the perception of one sound is affected and compromised by the presence of another sound." https://blogs.qsc.com/live-sound/auditory-masking-and-its-effect-on-our-perception-of-sound/#:~:text=Auditory%20masking%20occurs%20when%20the,temporal%20or%20non%2Dsimultaneous%20masking; Brian K. Branstetter and Jillian M. Sills, *Mechanisms of auditory masking in marine mammals*, Anim Cogn. (Aug. 26, 2022).

high-intensity anthropogenic noise is not a novel phenomenon, in fact, it has been documented in studies for decades.

100. In March 2000, the U.S. Navy admitted that its high-intensity sonar systems resulted in the strandings of sixteen beaked and minke whales after the Navy ships passed by through the Bahamas.[39]

101. Studies conducted by Tyack (1998) and Tyack and Clark (1998) concluded that 10 of 17 singing Humpback whales exposed to low-frequency sounds from the SURTASS-LFA4 sonar system stopped singing during playback with a source level that ranged from 155 to 205 dB, resulting in maximum received levels of 120 to 150 dB . . . ."[40]

102. "Low-frequency sound also may affect sperm whales because their wide-band clicks contain energy between 100 and 2,000 Hz (Watkins et al., 1985; Moore et al., 1993), which is suggestive of low-frequency hearing . . . Many earlier reports suggest that sperm whales may silence or move out of an area in response to manmade noise (Watkins et al., 1985; Bowles et al., 1994; Mate et al., 1994)."[41]

103. The Atlantic Shores Bight LLC's ITA application, for

[39] Mark Schrope, *Whale deaths caused by US Navy's sonar*, Nature (Jan. 10, 2002), https://www.nature.com/articles/415106a.

[40] National Research Council, *Marine Mammals and Low-Frequency Sound (2000)*, https://www.ncbi.nlm.nih.gov/books/NBK225334/.

[41] *Id.*

example, concedes that their characterization surveys can interfere, in particular with low-frequency communicating mammals "Impacts most likely to occur from HRG[42] surveys are masking of sound and behavioral disturbance (URI 2021a). Masking effects have the largest impacts on low-frequency communicating mammals like baleen whales (NOAA 2021a)."[43]

104. Furthermore, many studies have deduced a possible causal link between naval sonar operations and whale strandings:

> Several papers have suggested that beaked whales tend to strand when there are naval operations offshore. Simmonds and Lopez-Jurado (1991) reported on four mass strandings between 1985–1989 of Cuvier's beaked whale (Ziphius cavirostris) on the coast of Fuerteventura in the Canary Islands that may have been related to naval maneuvers. Frantzis (1998) reported on another mass stranding of 12 or more beaked whales sighted over 38 km of coastline during two days (May 12 and 13, 1996) in the Kyparissiakos Gulf in Greece. There was no external sign of injury or disease in any of these animals. Frantzis (1998) concluded that the mass stranding was associated with a concurrent NATO sonar exercise. The Frantzis paper stimulated the NATO research center that conducted the sonar tests to convene panels to review the data (D'Amico, 1998). The NATO sonar transmitted two simultaneous signals, one at 450–700 Hz

[42] High-resolution geophysical.

[43] Request for an Incidental Harassment Authorization to Allow the Non-Lethal Take of Marine Mammals Incidental to Site Characterization Surveys of the Atlantic Shores Lease Area (OCS-A 0541), Atlantic Shores Bight LLC (Apr. 2022), https://media.fisheries.noaa.gov/2022-06/AtlanticShoresBightHRG_2022PropIHA_App_OPR1.pdf.

> and one at 2.8–3.3 kHz at source levels of just under 230 dB. This combined signal lasted four seconds and was repeated once every minute. The NATO analysis suggested close timing between the onset of sonar transmissions and the first strandings.[44]

105. A U.S. Court of Appeals 9th Circuit case found that the U.S. Navy's low frequency sonar was harming marine mammals, and ordered the U.S. Navy to develop new rules that would adequately comply with the requirements of MMPA § 1371(a)(5)(A)(i)(II)(aa) for "least practicable impact" on said mammals.[45]

106. Importantly, an internal memorandum[46] written by Sean Hayes, Ph.D., the Chief of Protected Species at NOAA Northeast Fisheries Service Center, sent to Brian Hooker (lead biologist at Bureau of Ocean Energy Management) strongly warns of the numerous deleterious impacts of turbine construction and operation on marine mammals, including and especially right whales.

> These risks occur at varying stages, including construction and development, and include increased noise, vessel traffic, habitat modifications, water withdrawals associated with certain substations and resultant

[44] National Research Council, *Marine Mammals and Low-Frequency Sound (2000)*, https://www.ncbi.nlm.nih.gov/books/NBK225334/.

[45] NRDC, Inc. v. Pritzker, 828 F.3d 1125 (9th Cir. 2016).

[46] See, Exhibit C, Internal NOAA memorandum.

> impingement/entrainment of zooplankton, changes in fishing effort and related potential increased entanglement risk, and oceanographic changes that may disrupt the distribution, abundance, and availability of typical right whale food.

107. Various news and media outlets have been disseminating the statements made by federal and state agencies to the effect that no connection exists between the spate of whale/dolphin strandings and the ongoing offshore wind turbine preparatory work.

108. NOAA asserts that there is no evidence to support speculation attributing the whale deaths to the seabed characterization related noise [47], presumably referring to evidence of hearing organ damage.

109. However, necropsies do not often look for damage to marine mammals' hearing organs and cannot show whether disturbance from noise led to behaviors that can and do invariably lead to injury and death, as described passim. Rather, that connection needs to be plausibly made through a thorough examination of vessel location, noise device use and power settings and other factors at

[47] Robert Zullo, *Wind and whales: 'No evidence' links projects to deaths*, Virginia Mercury (Mar. 3, 2023), https://www.virginiamercury.com/2023/03/03/wind-and-whales-no-evidence-links-projects-to-deaths/#:~:text=%E2%80%9CAt%20this%20point%2C%20there%20is,NOAA%20said%20in%20a%20statement.

the times of the whale deaths.

110. Hence, to suggest there is no evidence of a connection between the turbine preparatory activity and the strandings based solely on the necropsies is misleading because such evidence is neither looked for or can be found. Therefore, claiming it doesn't exist is proof of nothing.

111. The NJ DEP has joined in this chorus of avoidance of evidence, "As of March 2023, no offshore wind-related construction activities have taken place in waters off the New Jersey coast, and DEP is aware of no credible evidence that offshore wind-related survey activities could cause whale mortality."[48]

112. For instance, a News 12 New Jersey article discussing the NJ DEP's statement notes that necropsies have determined that some whales died due to vessel strikes.[49] But this is potentially only the secondary cause of death.

113. NOAA further avers that these strandings have been increasing since 2016 [50] but that is not borne out by the graph in

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[48] NJDEP STATEMENT ON EAST COAST WHALE MORTALITIES, Department of Environmental Protection (Mar. 15, 2023),https://www.nj.gov/dep/newsrel/2023/23_0021.htm#:~:text=As%20of%20March%202023%2C%20no,activities%20could%20cause%20whale%20mortality.

[49] Matt Trapani, *NJDEP: 'No credible evidence' offshore wind power projects are killing whales*, NEWS 12 NJ (Mar. 15, 2023), https://newjersey.news12.com/njdep-no-credible-evidence-offshore-wind-power-projects-are-killing-whales.

[50] Marine Life In Distress - 2016-2023 Humpback Whale Unusual Mortality Event Along the Atlantic Coast, NOAA Fisheries (Mar. 23, 2023), https://www.fisheries.noaa.gov/national/marine-life-distress/2016-2023-humpback-whale-unusual-mortality-event-along-atlantic-coast.

paragraph 49. That graph shows low strandings in 4 of the last 7 years. Also, such an assertion fails to account for the exponential increase in the rate of mortality events over the past 3-4 months in the regions off of NJ/NY specifically authorized by Defendant to conduct noise-based characterization.

114. In 2020, a series of 29 beaked whale strandings/sightings occurred on the northern shores of Europe.[51] Experts then suggested the strandings were related to a military sonar exercise.[52] Among the research cited was a prominent Australian study which found a "Strong association between beaked whale stranding events with the presence of multinational naval ASW training operations."[53] Those operations used mid-frequency sonar.

115. Finally, and additionally, given all the above, and as stated by Dr. Stern in his numerous submitted comments in connection with the ITAs, "The scope of the Level A and serious injury/death analysis here is insufficient. The take numbers generated under the level B analysis are low and not justified compared to those using current scientific norms for estimating

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[51] Betsy Reed, *Beached whale increase may be due to military sonar exercises, say experts*, The Guardian (Aug. 25, 2020), https://www.theguardian.com/environment/2020/aug/24/beached-whale-increase-may-be-due-to-military-sonar-exercises-say-experts.

[52] *Id.*

[53] Anne E. Simonis,et al., *Co-occurrence of beaked whale strandings and naval sonar in the Mariana Islands, Western Pacific*, Proc. R. Soc. B. (Feb. 19, 2020), https://royalsocietypublishing.org/doi/10.1098/rspb.2020.0070.

noise propagation loss. The potential for Level A takes from cumulative exposure has not been analyzed."[54] The Defendant NMFS, in the active and pending ITAs, are authorizing these ITAs with virtually no requested Level A harassment takes. This flies in the face of all the evidence of pathways to harm and death from cumulative exposure to the noise, outlined herein, and the exponential rise in marine mammal deaths attributable to same.

116. Accordingly, it is entirely counterfactual to assert there is "no evidence" given the above.

Climate Change Mitigatory Ability of Whales is Significant

117. Finally, and importantly, Defendants, inter alia, will argue that one of the primary goals of wind turbine development is climate change mitigation. However, the final Environmental Impact Statement for the Vineyard wind project states that there will be "no effect" on climate change from these projects.[55] Save LBI also assembled and presented to the Defendant NMFS sea level rise data from International Panel on Climate Change reports that show that the impact of these projects will not reduce future sea level rise at all, but only delay whatever is coming for a very modest time. For the Atlantic Shores project that delay would amount to about

[54] Dr. Stern's submitted comments in connection with Atlantic Shore's ITA.
[55] Appendix A - Vineyard Wind 1 Offshore Wind Energy Project Final Environmental Impact Statement Volume II (Mar. 2021), https://tethys.pnnl.gov/sites/default/files/publications/Vineyard-Wind-1-FEIS-Volume-2.pdf, page 66:"Overall, it is anticipated that there would be no collective impact on global warming as a result of offshore wind projects."

nine days, so the argument that these projects are necessary and must proceed rapidly to save the planet does not hold seawater.[56]

118. In fact, a Harvard University study that analyzed 28 operational wind farms in the US suggests that wind turbines can impart an effect of warming temperatures, primarily through enhancement of low-level atmospheric mixing and interruption of radiative nighttime cooling. This net localized warming effect was quantified in 10 other studies, cited therein.[57] This warming effect could be non-negligible at a continental scale, assuming a very high amount of wind power, though less certain as to global scale temperature impacts.[58]

119. Defendants and others advocating for turbines, also fail to recognize the immense carbon sequestration capacity of great whales. Each, single great whale sequesters 33 tons of carbon dioxide (CO2) on average, removing same from the atmosphere for centuries.[59]

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[56] Reference: Letter from Save LBI, Comments and Project Concerns by the Long Beach Island, NJ, Coalition for Wind Without Impact Regarding the Notice of Intent for the Atlantic Shores Offshore Wind Projects, Docket # BOEM-2021-0057. October 21, 2021

[57] Lee Miller and David Keith, Climatic Impacts of Wind Power, Joule (Dec. 19, 2018), https://www.sciencedirect.com/science/article/pii/S254243511830446X.

[58] David W. Keith, et al., The influence of large-scale wind power on global climate, Environmental Sciences (Nov. 9, 2004), https://www.pnas.org/doi/abs/10.1073/pnas.0406930101.

[59] Ralph Chami, et al., *Nature's Solution To Climate Change* , International Monetary Fund (Dec. 2019), https://www.imf.org/en/Publications/fandd/issues/2019/12/natures-solution-to-climate-change-chami.

120. Whales have a multiplicative effect on phytoplankton generation, which offset global CO2 production levels by an incredible 40% annually through capturing 30-50 billion metric tons of CO2 per year[60](occurs via CO2 fixation by phytoplankton). Thus, the destructive impacts of wind turbine surveying and future operations on the whale population will in fact reduce the Earth's inherent carbon sequestration abilities, through reducing whales and by extension phytoplankton.

121. Conversely, it is estimated that all wind energy (on and offshore) offsets CO2 by only 340 million tons annually.[61] Hence, phytoplankton alone capture 147 times more CO2 than wind energy annually. When one combines the multiplicative effect of whales on phytoplankton (and whales themselves), the CO2 offsetting effect of whales and phytoplankton are very significant, and the latter surpasses wind energy by an exceedingly high amount.

122. As per the International Monetary Fund, "If whales were allowed to return to their pre-whaling number of 4 to 5 million—from slightly more than 1.3 million today—it could add significantly to the amount of phytoplankton in the oceans and to

[60] P G Falkowski, *The role of phytoplankton photosynthesis in global biogeochemical cycles*, Photosynth Res. (Mar. 1994), https://pubmed.ncbi.nlm.nih.gov/24311124/#:~:text=Phytoplankton%20biomass%20in%20the%20world's,about%2040%25%20of%20the%20total.

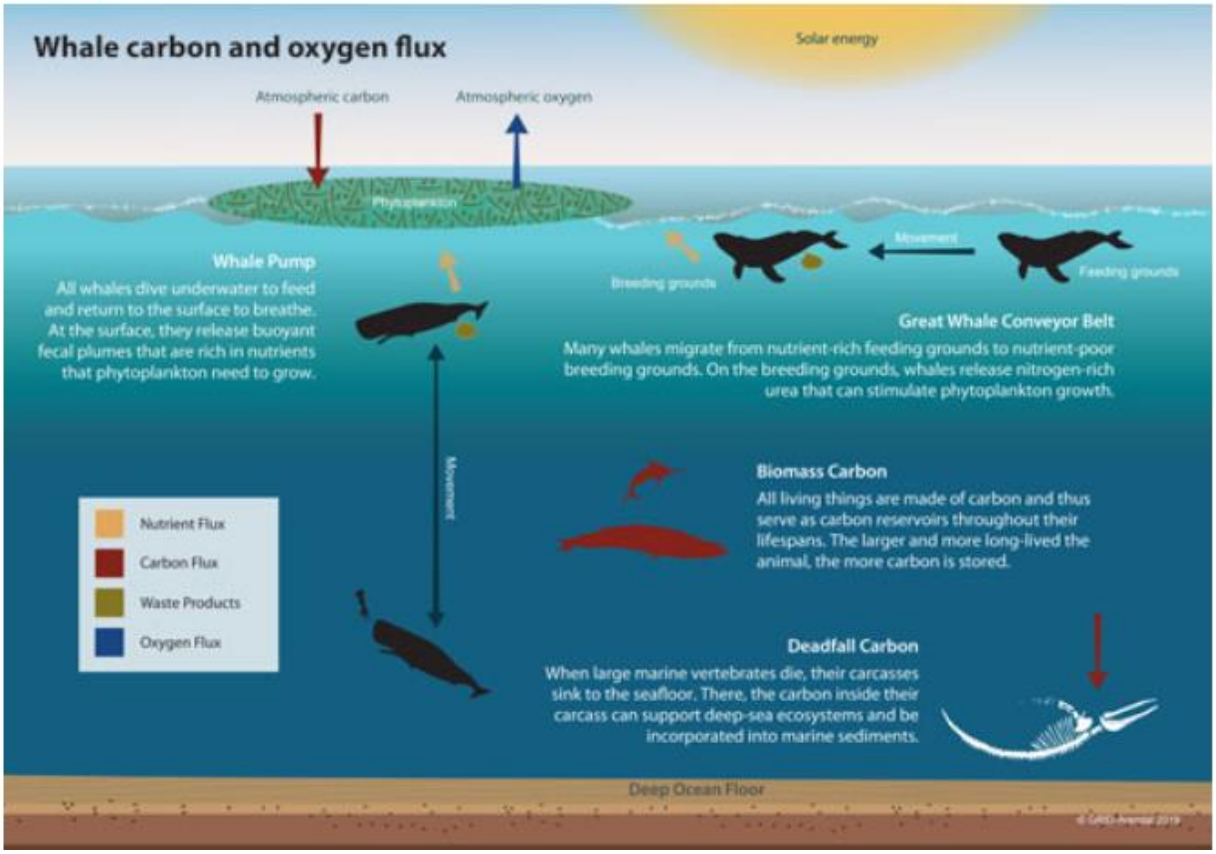
[61] Wind power facts, American Clean Power, https://cleanpower.org/facts/wind-power/#:~:text=Environmental%20benefits,million%20cars'%20worth%20of%20emissions.

the carbon they capture each year. At a minimum, even a 1 percent increase in phytoplankton productivity thanks to whale activity would capture hundreds of millions of tons of additional CO2 a year, equivalent to the sudden appearance of 2 billion mature trees."[62]

123. As depicted in the below image, whales play an integral role in the Earth system carbon and oxygen flux, by facilitating transport of nutrients, production of phytoplankton, and oxygen, as well as reduction of carbon dioxide.

[62] Ralph Chami, et al., *Nature's Solution To Climate Change* , International Monetary Fund (Dec. 2019), https://www.imf.org/en/Publications/fandd/issues/2019/12/natures-solution-to-climate-change-chami.

Chart 1



D. Violations of the MMPA have occurred because the cumulative impact of the ITAs on marine mammals, particularly North Atlantic right whales and Humpback Whales, is more than a small number of the population, and will have a greater than negligible impact on the species, and, certain ITA applicants are not US citizens; Violations of the APA have occurred, as the quantity of requested takes were determined arbitrarily and

capriciously by underestimating outward sound propagation from vessels among other reasons, and by underestimating the Level A harassment takes that are occurring; and, violations of NEPA and APA for failure to prepare EIS assessing the cumulative impact of ITAs

FIRST CLAIM FOR RELIEF

Violation of the MMPA, 16 U.S.C. § 1371(a)(5)(D),(i),(I)

124. Plaintiffs hereby incorporate by this reference each paragraph and allegation set forth above.

125. The MMPA provides, as noted *supra*, 16 U.S.C. § 1371(a)(5)(D),(i),(I), that the prescribed activity must only take "small numbers of marine mammals" and such harassment can only have a "negligible impact on such species or stock."

126. The implementing regulations define "negligible" and "small numbers" as follows, pursuant to 50 CFR 18.27:

> "Negligible impact is an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."
>
> "Small numbers means a portion of a marine mammal species or stock whose taking would have a negligible impact on that species or stock."

127. Cases interpreting these provisions, including analysis of legislative intent and history, such as Ctr. for Biological

Diversity v. Salazar, 695 F.3d 893 (9th Cir. 2012), have determined that the "small numbers" and "negligible" clauses are two separate and distinct standards. "Specifically, the "small numbers" determination focuses on the portion of a species or stock subject to incidental take, whereas the "negligible impact" analysis focuses on the impact of the anticipated take."[63]

128. Therefore, the agencies issuing ITAs must "reasonably determine through some other means that the specified activity will result in take of only 'small numbers' of marine mammals. The Service can analyze 'small numbers' in relation to the size of the larger population, so long as the 'negligible impact' finding remains a distinct, separate standard."[64]

129. As presented in paragraphs 25-26, the Act requires the assessment of cumulative impact in determining small numbers and negligible impact. The implementing regulations at 50 CFR 18.27(b)(3), regarding scope, include a note discussing "cumulative" impacts: "The information is being collected to describe the activity proposed and estimate the cumulative impacts of potential takings by all persons conducting the activity."

130. Hence, it's clear the intent of the statute is to assess the cumulative impacts of takings.

131. The Defendants are also required to implement the MMPA

[63] *Id.* at 906.

[64] *Id.* at 907.

using the "best scientific evidence available." Said science demands the use of fact and mathematics. The fact is that the right whale is seeking to migrate while being assaulted from numerous vessel survey activities with noise levels that disturb its behavior. Each such disturbance carries a finite mathematical probability that that disturbance will result in serious harm or fatality. It is the sum of those probabilities that determines whether or not it can succeed in its essential migration, and therefore whether there is a non-negligible impact to the species.

132. Therefore, both the law and the facts demand a cumulative impact assessment, for the Defendant NMFS to act otherwise and to determine impact on a piecemeal basis is contrary to the MMPA and both arbitrary and capricious.

133. The cumulative impact of the issued, active ITAs for the coastal waters of the NJ/NY region is such that it violates the "small numbers" and "negligible impact" provisions of the MMPA.

134. The active ITAs granted by the Defendant total 182 takes of North Atlantic Right Whales.[65] The five pending ITAs[66] currently

[65] *See supra* note 2.

[66] https://media.fisheries.noaa.gov/2022-11/TerraSond_2022IHA_App_OPR1.pdf;

https://media.fisheries.noaa.gov/2022 03/OceanWind1OWF_2022_508APP_OPR1.pdf;

https://media.fisheries.noaa.gov/2022-09/AtlanticShoresOWF_2022_Application_OPR1.pdf;

https://media.fisheries.noaa.gov/2022-09/Empirewind_2024LOA_App_OPR1.pdf;

with Defendant will add an additional 229 takes of North Atlantic Right Whales.

135. The Defendant's webpage places the current population estimate of North Atlantic Right Whales at 350,[67] and not all migrate through NJ and NY coastal waters.

136. Thus, the 182 cumulative authorized takes of right whales, given a local population estimate of less than 350, can amount to more than 52% of the migrating population. If the pending ITAs are issued (229 more takes), that percentage will be even higher.

137. This is contrary to any reasonable interpretation or dictionary definition of "small numbers" or "negligible impact."

138. The Merriam-Webster definition of "negligible" is: "so small or unimportant or of so little consequence as to warrant little or no attention."[68] It is axiomatic that 52% of the migrating population of an endangered species is far more than negligible.

139. Similarly, the Merriam-Webster definition of "small" includes words such as: minor, trivial, of little consequence, and

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https://media.fisheries.noaa.gov/2022-11/SunriseWind_2022ITR_App_PR1.pdf;

[67] North Atlantic Right Whale, NOAA Fisheries (Mar. 17, 2023), https://www.fisheries.noaa.gov/species/north-atlantic-right-whale#:~:text=Population%20Status,years%20has%20been%20below%20average.

[68] Merriam-Webster, Definition of negligible, https://www.merriam-webster.com/dictionary/negligible#:~:text=%3A%20so%20small%20or%20unimportant%20or,little%20or%20no%20attention%20%3A%20trifling.

limited.[69] This runs contrary to a determination on the order of 52% of an endangered species.

140. Moreover, as to Humpback whales, the eleven active ITAs issued by Defendant off the NJ/NY coasts amount to 169 requested takes[70] of Humpback whales. Given a population size of 1,396, this yields takes amounting to 12.1% of the total population of Humpback whales. The five pending ITAs request takes of 782 additional Humpback whales. This yields 951 total, or 951/1,396 = 68.1% of the population.

141. Even on an individual survey authorization basis, the

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[69] Merriam-Webster, Definition of small, https://www.merriam-webster.com/dictionary/small#:~:text=small%2C%20little%2C%20diminutive%2C%20minute,a%20relatively%20small%20backyard.

[70] As ascertained from summing the Level B requested takes on each respective ITA application for the currently active/issued ITAs: https://media.fisheries.noaa.gov/2022-08/OrstedNEHRG_2022IHA_App_OPR1.pdf; https://media.fisheries.noaa.gov/2022-05/Vineyard%20Northeast%20LLC_HRG%20IHA%20Application%20508_OPR1_0.pdf; https://media.fisheries.noaa.gov/2022-06/AttentiveEnergyNYBight_2022IHA_App_OPR1.pdf.pdf; https://media.fisheries.noaa.gov/2022-06/AtlanticShoresBightHRG_2022PropIHA_App_OPR1.pdf; https://media.fisheries.noaa.gov/2022-05/Park%20City%20Wind_App_508_OPR1_0.pdf; https://media.fisheries.noaa.gov/2022-05/NEETMA_2022IHA_App_OPR1.pdf; https://media.fisheries.noaa.gov/2022-03/OceanWind_2022IHA_App_OPR1.pdf; https://media.fisheries.noaa.gov/2022-03/Orsted_2022IHA_app_OPR1.pdf; https://media.fisheries.noaa.gov/2021-04/OceanWind_2021IHA_App_OPR1.pdf?null=; https://media.fisheries.noaa.gov/2022-01/AtlanticShoresHRG_2022_App_OPR1.pdf; https://media.fisheries.noaa.gov/2021 02/SouthForkWind_2021proposedIHA_App_OPR1.pdf?null=;

Defendant's threshold of one-third for "small numbers" is not supported scientifically nor consistent with case precedent. "A definition of 'small number' that permits the potential taking of as much as 12 percent of the population of a species is plainly against Congress' intent." NRDC v. Evans, 232 F. Supp. 2d 1003 (N.D. Cal. 2002).

142. The Defendant states in its authorizations that when the predicted number of individuals to be taken is less than one-third of the species or stock abundance, the take is considered to be "small numbers".[71] This is extraordinarily high, particularly for a critically endangered whale, and we can find no support for it in the scientific literature, which suggests thresholds such as 2.5%[72] and 1.0%.[73]

143. Therefore, the case law and science supports a "small

[71] 87 FR 40796, Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Marine Site Characterization Surveys off New Jersey by NextEra Energy Transmission MidAtlantic Holdings, LLC (July 8, 2022), https://www.federalregister.gov/documents/2022/07/08/2022-14569/takes-of-marine-mammals-incidental-to-specified-activities-taking-marine-mammals-incidental-to, "As such, NMFS considers that one-third of the most appropriate population abundance number—as compared with the assumed number of individuals taken—is an appropriate limit with regard to "small numbers."

[72] A reasoned presentation of impact ratings based on severity and likelihood of occurrence by Wood, Southall, and Tollit can be found in Appendix H of the Pacific Gas and Electric report titled, Central Coastal California Seismic Imaging project, May 14, 2012. That analysis leads to, in Tables 3.3 and 3.4, a high severity rating for Level B takes greater than 2.5 percent of an Endangered Species Act (ESA)-listed regional minimum population. Combined with either a high or medium likelihood of occurrence in Table 3.5 that results in an overall high impact rating

[73] The final environmental assessment of a Marine Geophysical Survey (MATRIX) by the US Geological Survey in the Northwestern Atlantic Ocean, August, 2018, suggests on page 65 that for rare species, that one percent of the population size should be considered as a take limit.

number" criteria less than 12 percent, which even some of Defendant's individual ITAs would not meet. A level B take percentage of 33.3 percent is unsupported legally, mathematically and scientifically.

144. With respect to findings of negligible impact, the Biological removal rate for the right whale is less than one animal per year meaning that not one animal can suffer fatality from these activities, in order to sustain the population.

145. In the face of hundreds of level B takes, to reach such a negligible impact conclusion, the defendant would have to find that none of them resulted in such a fatality. Given all of the potential pathways to such an outcome described in paragraphs 87 through 105, such a conclusion would ignore numerous scientific studies and evidence, and be both arbitrary and capricious. And in fact, the defendant even on individual authorizations never reaches such conclusions with that confidence but only speaks to generalized expectations and anticipations.

146. Such a conclusion would conflict with the MMPA itself. If hundreds of Level B Takes to a critically endangered whale is innocuous, why does the law even require its assessment?

147. Additionally, given, as noted *supra*, the Defendant's underestimation of the maximum extent of spatial propagation of the noise emanating from survey vessels, and the uncertainty regarding subsequent negative impacts to whales, including the

potential for death (i.e., evidenced by the recent statistically significant increase in deaths), Defendant's ITAs cannot be said to unequivocally comport with the statutory directive prohibiting an "unmitigable adverse impact on the availability of such species." 16 U.S.C. § 1371(a)(5)(D),(i),(I).

148. Furthermore, as explained *supra*, the issued ITAs improperly determined, and significantly underestimated, the requested quantity of takes, due to reasons outlined by Dr. Robert Stern, such as, inter alia, underestimation of spatial extent of sound propagation.[74]

149. Therefore, the ITAs were granted in contravention of the MMPA, 16 U.S.C. § 1371(a)(5)(D),(i),(I), since the cumulative effect of the ITAs, and even individual ITAs, will take more than a reasonably defined small number of the marine mammals, specifically North Atlantic right whales and Humpback Whales, and will have more than a negligible effect on the species. Defendant's determination of the number of takes was discordant with the statutory directive requiring only "small numbers" and "negligible

[74] See, Exhibit B, Dr. Robert Stern's analysis and letter to President Biden. The Defendant often cites a measurement study which shows that Defendant underestimates the magnitude/intensity of the source level noise from the vessel surveys. Moreover, Defendant uses an improper noise loss factor (20 decibels) which overestimates the extent of noise dissipation from the source. The end result is Defendant significantly underestimates the propagation range to the 140+ and 160+ decibel criteria from the source, noise which has been shown in studies to disturb whales (leading to many negative impacts, including death). As discussed supra, Defendant assumes a distance of 141 meters (slightly less than 1/10 mile) for Level B harassment noise. Dr. Stern's analysis finds such noise can propagate to 16-34 miles from the sound source.

impact."

150. Separately and finally, Defendants also violate 16 U.S.C. § 1371(a)(5)(D)(i) by issuing ITAs (and considering pending ITAs) to certain foreign national companies, violating the clear statutory directive of (i), "Upon request therefor by citizens of the United States who engage in a specified activity . . . the Secretary may specify, the incidental, but not intentional, taking by harassment . . . ." Only U.S. citizens are afforded the legal ability to obtain ITAs. Of the eleven issued, active ITAs, and five pending, the following ITAs were requested by non-U.S. citizens, in part or whole: Orsted Wind Power North America, LLC,[75] Vineyard Northeast, LLC,[76] Ocean Wind I and II,[77] South Fork Wind, LLC[78] and Empire Offshore Wind, LLC.[79] These projects are all partially or wholly owned by foreign nationals, not U.S. citizens, in contravention of the MMPA.

SECOND CLAIM FOR RELIEF

[75] Danish State holds the majority of shares, https://orsted.com/en/investors/shares.

[76] Vineyard Wind is a joint venture between Avangrid of Connecticut and Copenhagen Infrastructure Partners of Denmark.

[77] These two ITAs were requested by Orsted of the Danish State, https://oceanwindone.com/, https://us.orsted.com/news-archive/2021/06/ocean-wind-2#:~:text=%C3%98rsted%20Offshore's%20North%20American%20business,employs%20more%20than%20150%20people.

[78] Owned by Orsted (Denmark) and Eversource (Connecticut), https://southforkwind.com/.

[79] Owned by British Petroleum (United Kingdom) and Equinor (Norway), https://www.empirewind.com/.

Violation of the APA

151. Plaintiffs hereby incorporate by this reference each paragraph and allegation set forth above.

152. The APA, at 5 U.S.C. § 706(2)(A) and (E) provides that agency action shall be held unlawful and set aside if it is "(A)arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;" and "(E)unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute."

153. In issuing the eleven active ITAs, and five pending ITAs with Defendant NMFS, the Defendant NMFS arbitrarily, capriciously and without substantial evidence, determined the number of requested takes. Defendant NMFS' requested takes were largely based upon incorrect noise loss factors emanating from the vessel source. Defendant NMFS has very frequently used, and even recommended, a different, more reasonable "practical" noise loss factor;[80] however, they do not employ the reasonable noise factor in connection with these ITAs. Defendant NMFS' significant underestimation of the maximum spatial extent of Level B harassment noise constitutes an arbitrary and capricious agency action. Defendant NMFS arbitrarily and without substantial evidence allows

[80] See, Exhibit B, Dr. Robert Stern's analysis and letter to President Biden.

wind energy companies to use a maximum spatial extent (from sound source) Level B harassment distance of 141 meters. Even considering the high number of requested takes in the ITAs (which violate the MMPA), such requested takes are greatly underestimated due to the above.

154. Moreover, and finally, the APA is violated because the Defendant NMFS arbitrarily, capriciously, and without substantial evidence, assumed virtually no Level A harassment takes would occur (as can be seen in all the approved and pending ITAs – little to no Level A takes were requested). This decision runs counter to the mountains of evidence, supra, on how exposure, especially cumulatively, to disturbance level noise can cause marine mammals to suffer many detrimental effects, including injury and death. The exponential increase in whale and dolphin deaths over recent months, in concert with all the evidence discussed supra, is clear evidence that Level A harassment takes are occurring (injury and even worse – death). Yet, virtually no Level A takes were requested in any of the approved and pending ITAs.

THIRD CLAIM FOR RELIEF

Violation of NEPA, 42 USCS § 4332(2)(C), and APA

155. Plaintiffs hereby incorporate by this reference each paragraph and allegation set forth above.

156. Pursuant to NEPA, 42 USCS § 4332(2)(C), and as

interpreted by case precedent, "In deciding whether a major federal action will 'significantly' affect the quality of the human environment, under § 102(2)(C) of the National Environmental Policy Act, the agency in charge, although vested with broad discretion, should normally be required to review the proposed action in the light of at least two relevant factors: (1) the extent to which the action will cause adverse environmental effects in excess of those created by existing uses in the area affected by it, and (2) the absolute quantitative adverse environmental effects of the action itself, including the cumulative harm that results from its contribution to existing adverse conditions or uses in the affected area."[81]

157. Moreover, agencies are not permitted to segment actions into individual pieces, rather, they must assess major federal actions cumulatively, "The Council on Environmental Quality regulations require that 'cumulative actions' be considered together in a single environmental impact statement. 40 C.F.R. § 1508.25(a)(2)."[82]

158. Here, the Defendant NMFS' final agency action by way of issuing eleven individual ITAs off the New Jersey/New York coastlines constitutes a major federal action which significantly affects the quality of the human environment. As thoroughly

[81] Hanly v. Kleindienst, 471 F.2d 823 (2d Cir. 1972).
[82] Thomas v. Peterson, 753 F.2d 754 (9th Cir. 1985).

explained supra, the inordinate amount of requested takes of marine mammals, including mammals listed as endangered species (e.g., North Atlantic right whale) in the individual and cumulative ITAs, throughout the waters off NY/NJ, will satisfy both prongs of the "significantly affect" standard delineated by case precedent. The approved ITAs, and soon likely approval of pending ITAs, is causing adverse environmental effects in excess of those created by existing uses in the region (again, explained herein, passim). The final agency action has also resulted in quantitative adverse environmental effects, including cumulative harm, to marine mammals, especially dolphins and whales.

159. As such, Defendant NMFS was derelict in its statutorily imposed duty to assess the cumulative effects of a major federal action significantly affecting the quality of the human environment in an environmental impact statement, analyzing the cumulative effects of the eleven issued ITAs.

160. This lack of cumulative assessment in an environmental impact statement constitutes a violation of NEPA, 42 USCS § 4332(2)(C), and violation of the APA, 5 U.S.C. § 706(2)(A) and (E), as arbitrary and capricious agency action, and unsupported by substantial evidence.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully request that this Court:

(1) Enter an order reversing and setting aside National Marine Fishery Service's eleven active ITAs issued for the New Jersey and New York coastal regions as arbitrary, capricious, and contrary to law, including the Marine Mammal Protection Act and Administrative Procedures Act;

(2) Enjoin the Defendant NMFS from issuing the five pending ITAs as such ITAs are arbitrary, capricious, and contrary to law, including the Marine Mammal Protection Act and Administrative Procedures Act;

(3) Direct the Defendant NMFS to halt consideration of prospective ITAs concerning wind energy projects in the New York/New Jersey waters;

(4) Direct the Defendant NMFS to create an Advisory Board of acoustic and marine mammal specialists with sufficient independence to: (a) perform a thorough, transparent, investigation of the potential causes of the recent statistical anomaly of whale deaths; and, (b) develop noise impact estimation protocols for use in future IHAs and ITAs; (c) That if that Board finds that the vessel surveys are a plausible cause of the whale deaths, require the Defendant NMFS to submit to the Court a revised vessel survey program that includes measures to achieve the least practicable adverse impact on the species. Such measures could include the avoidance of surveys in primary whale migration

corridors during primary migration months and a data sharing Program among the different companies to avoid the need for multiple vessels gathering essentially the same data.

(5) Direct the Defendant NMFS to prepare an environmental impact statement assessing the cumulative impacts of the ITAs pursuant to NEPA.

(6) Award Plaintiffs' reasonable attorneys' fees and costs under the Equal Access to Justice Act; and

(7) Provide such other and further relief as the Court may deem just.

Dated: April 4, 2023

Respectfully submitted,

/s/ Thomas Stavola, Jr.

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